

兩片式NREL風力機流場之氣動力模擬

牛仰堯, 湯漢威

機械工程學系

工學院

yniu@chu.edu.tw

摘要

This work will reconstruct a three-dimensional 2-blade wind turbine of hub as NREL VI type model and compared to test data in NASA AMES Wind Tunnel. The three-dimensional wind blade flowfields will be simulated on non-inertial rotational main frame by Navier-Stokes Solver. The phenomena as the occurrence of aerodynamics forces, pressure coefficient, thrust force and velocity of flowfields are investigated by a low Mach Number incompressible solver (Fluent flow package) coupling with Spallart-Allmaras Turbulence models. Comparing aerodynamics of a two-dimensional S809 airfoil with validated data is shown to be in good agreement.

關鍵字：Wnd Turbine, S809 airfoil , NREL Phase VI blade, Aerodynamics, CFD